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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/595,024

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Mitsuru Sekiya

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EXAMINER

AURORA, REENA

ART UNIT

PAPER NUMBER

2862

MAIL DATE

DELIVERY MODE

01/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/595,024	SEKIYA, MITSURU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Reena Aurora	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4, 7 and 20 - 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4, 7 and 20 - 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This communication is in response to amendment received on 10/17/08.

Claims 4, 7, 20 and 21 are presented for examination.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7 and 20 - 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oudet et al. (5,532,585) in view of Welsch et al. (2003/0137293).

As to claim 4, Oudet et al. (hereinafter Oudet) discloses a position sensor comprising a non-contact position sensor comprising: a slider (12) having a magnet (3) having a front face along a longitudinal direction of the magnet that has one polarity and a back face along the longitudinal direction of the magnet that has an opposite polarity;

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a main stator (1) consisting of a magnetic body having a first pair of opposed walls (4, 5) forming an area in which the slider enters while keeping a predetermined clearance, the first pair of opposed walls (4, 5) corresponding to the front and back faces of the magnet (7), and a first gap (2) continuing into the opposed walls (4, 5); a magnetically-sensitive sensor (7) arranged in the first gap to detect a position of the slider (12) corresponding to a percentage of the magnet (3) entering the area. Oudet fails to show an assist stator for preventing magnetic flux, which is generated in a part of the magnet that does not enter the area, from leaking out to the main stator, wherein the assist stator has a second pair of opposed walls corresponding to front and back faces of the part of the magnet that does not enter the area and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, wherein the first and second gaps are formed uniformly along a moving direction of the slider, respectively. Welsch et al. (hereinafter Welsch) discloses a non-contact position sensor including an assist stator (2, fig. 1) for preventing magnetic flux, which is generated in a part of the magnet (6) that does not enter the area, from leaking out to the main stator 3, 4), wherein the assist stator (2) has a second pair of opposed walls (not labeled) corresponding to front and back faces of the part of the magnet (6) that does not enter the area and transverse walls (2, not labeled) extending from the second pair of opposed walls (not labeled) which are separated from each other through a second gap formed between the transverse walls (gap between two walls) wherein the first and second gaps are formed uniformly along a moving direction of the slider, respectively. Therefore, it would have been obvious to

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one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing an assist stator with a second pair of opposed walls corresponding to front and back faces of the part of the magnet that does not enter the area and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap (gap between the walls of assist stator) formed between the transverse walls, wherein the first (gap between the walls 3 and 4) and second gaps gap (between the walls of assist stator) are formed uniformly along a moving direction of the slider (6), respectively would increase the efficiency of the device by preventing the flux leakage and also the transverse wall would serve as magnetic flux converging portions.

As to claims 7, Oudet discloses a position sensor comprising a slider (12) having a magnet (3) having a front face along a longitudinal direction of the magnet that has one polarity and a back face along the longitudinal direction of the magnet that has an opposite polarity; a main stator (1) consisting of a magnetic body having a first pair of opposed walls (4, 5) forming a first area in which the slider enters while keeping a predetermined clearance, the first pair of opposed walls (4, 5) corresponding to the front and back faces of the magnet (3), and a first gap (2) continuing into the opposed walls and a magnetically-sensitive sensor (7) arranged in the first gap of the main stator (1) to detect a position of the slider corresponding to a percentage of the magnet (3) entering the first area of the main stator (1) and a magnetically-sensitive sensor (7) arranged in the first gap to detect a position of the slider (12) corresponding to a percentage of the magnet (3) entering the first area. Oudet fails to show an assist stator consisting of a

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magnetic body having a second pair of opposed walls forming a second area which allows the slider to move while keeping a predetermined clearance and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, wherein there is a third gap between the assist stator and the main stator, wherein the first and third gaps are formed uniformly along a moving direction of the slider respectively. Welsch et al. (hereinafter Welsch) discloses a non-contact position sensor including an assist stator (2) consisting of a magnetic body having a second pair of opposed walls (not labeled) forming a second area which allows the slider (6) to move while keeping a predetermined clearance and transverse walls (not labeled) extending from the second pair of opposed walls (2) which are separated from each other through a second gap (area between the walls) formed between the transverse walls (2), wherein there is a third gap (gap between 2 and 4) between the assist stator (2) and the main stator (3, 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oudet in view of the teachings of Welsch such that providing an assist stator consisting of a magnetic body having a second pair of opposed walls forming a second area which allows the slider to move while keeping a predetermined clearance and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, wherein there is a third gap between the assist stator and the main stator, wherein the first and third gaps are formed uniformly along a moving direction of the slider respectively would increase the efficiency of the device by

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preventing the flux leakage and also the transverse wall would serve as magnetic flux converging portions (col. 3, lines 41 - 45).

As to claims 20 and 21, Oudet discloses that the magnetically-sensitive sensor (7) is provided in a direction perpendicular to a moving direction of the slider (3).

### ***Response to Arguments***

Applicant's arguments with respect to claims 4, 7, 20 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reena Aurora whose telephone number is 571-272-2263. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Assouad can be reached on 571-272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Reena Aurora  
/Reena Aurora/  
Primary Examiner, Art Unit 2862